WHAT IS CLAIMED IS:

1. A cell search method for a mobile station in a mobile
communication system, the method being characterized by
5   comprising a first step of despreading a received signal
using a common spreading code common to all slots and
detecting slot boundaries on the basis of a first average
correlation coefficient, a second step of despreading the
signal on the basis of said slot boundaries detected at
10 the first step, using different individual spreading codes
for said respective slots, and detecting frame boundaries
and a scramble code group on the basis of a second average
correlation coefficient, and a third step of descrambling
a common pilot signal on the basis of said frame boundaries
15 and scramble code group detected at the second step, and
detecting a scramble code on the basis of a third average
correlation coefficient, and wherein after said first,
second, and third steps have been repeated, said first step
is executed to detect slot boundaries using a plurality
20 of said first average correlation coefficients.

2. The cell search method for a mobile station in a mobile
communication system according to Claim 1, characterized
in that said second step comprises detecting frame
25 boundaries and a scramble code group using a plurality of
said second average correlation coefficients with which
said slot boundaries detected at said first step are equal.

3.   The cell search method for a mobile station in a mobile communication system according to Claim 1, characterized in that said third step comprises detecting a scramble code using a plurality of said third average correlation

5   coefficients with which said frame boundaries and scramble code group detected at said second step are equal.

4.   The cell search method for a mobile station in a mobile communication system according to Claim 1, characterized

10   in that said first step comprises calculating a fourth average correlation coefficient by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and detecting said slot boundaries using a timing with which the fourth average

15   correlation coefficient is largest.

5.   The cell search method for a mobile station in a mobile communication system according to Claim 2, characterized in that said third step comprises detecting a scramble code

20   using a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected at said second step are equal.

6.   The cell search method for a mobile station in a mobile

25   communication system according to Claim 2, characterized in that said first step comprises calculating a fourth average correlation coefficient by averaging a plurality

of said first average correlation coefficients within a predetermined averaging section, and detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

5

7. The cell search method for a mobile station in a mobile communication system according to Claim 2, characterized in that said second step comprises calculating a fifth average correlation coefficient by averaging, within a

10 predetermined averaging section, a plurality of said second average correlation coefficients with which said slot boundaries detected at said first step are equal, and detecting said frame boundaries and scramble code group using a timing with which the fifth average correlation

15 coefficient is largest.

8. The cell search method for a mobile station in a mobile communication system according to Claim 3, characterized in that said first step comprises calculating a fourth

20 average correlation coefficient by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

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9. The cell search method for a mobile station in a mobile communication system according to Claim 3, characterized

in that said third step comprises calculating a seventh average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said third average correlation coefficients with which said frame

5 boundaries and scramble code group detected at said second step are equal, and detecting said scramble codes using the seventh average correlation coefficient.

10. The cell search method for a mobile station in a mobile

10 communication system according to Claim 5, characterized in that said first step comprises calculating a fourth average correlation coefficient by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and detecting said slot

15 boundaries using a timing with which the fourth average correlation coefficient is largest.

11. The cell search method for a mobile station in a mobile communication system according to Claim 5, characterized

20 in that said second step comprises calculating a fifth average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said second average correlation coefficients with which said slot boundaries detected at said first step are equal, and

25 detecting said frame boundaries and scramble code group using a timing with which the fifth average correlation coefficient is largest.

12. The cell search method for a mobile station in a mobile communication system according to Claim 5, characterized in that said third step comprises calculating a seventh average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected at said second step are equal, and detecting said scramble codes using the seventh average correlation coefficient.

13. A cell search method for a mobile station in a mobile communication system, the method being characterized by comprising a first step of despreading a received signal using a common spreading code common to all slots and detecting slot boundaries on the basis of a first average correlation coefficient, a second step of despreading the signal on the basis of said slot boundaries detected at the first step, using different individual spreading codes for said respective slots, and detecting frame boundaries and a scramble code group on the basis of a second average correlation coefficient, and a third step of descrambling a common pilot signal on the basis of said frame boundaries and scramble code group detected at the second step, and detecting a scramble code on the basis of a third average correlation coefficient, and wherein after said first, second, and third steps have been repeated, frame

boundaries and a scramble code group are detected using
a plurality of said second average correlation
coefficients with which said slot boundaries detected at
said first step are equal.

5

14. The cell search method for a mobile station in a mobile
communication system according to Claim 13, characterized
in that said third step comprises detecting a scramble code
using a plurality of said third average correlation
10 coefficients with which said frame boundaries and scramble
code group detected at said second step are equal.

15. The cell search method for a mobile station in a mobile
communication system according to Claim 13, characterized
15 in that said second step comprises calculating a fifth
average correlation coefficient by averaging, within a
predetermined averaging section, a plurality of said
second average correlation coefficients with which said
slot boundaries detected at said first step are equal, and
20 detecting said frame boundaries and scramble code group
using a timing with which the fifth average correlation
coefficient is largest.

16. The cell search method for a mobile station in a mobile
25 communication system according to Claim 14, characterized
in that said second step comprises calculating a fifth
average correlation coefficient by averaging, within a

predetermined averaging section, a plurality of said second average correlation coefficients with which said slot boundaries detected at said first step are equal, and detecting said frame boundaries and scramble code group

5   using a timing with which the fifth average correlation coefficient is largest.

17.   The cell search method for a mobile station in a mobile communication system according to Claim 14, characterized

10   in that said third step comprises calculating a seventh average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected at said second

15   step are equal, and detecting said scramble codes using the seventh average correlation coefficient.

18.   A cell search method for a mobile station in a mobile communication system, the method being characterized by

20   comprising a first step of despreading a received signal using a common spreading code common to all slots and detecting slot boundaries on the basis of a first average correlation coefficient, a second step of despreading the signal on the basis of said slot boundaries detected at

25   the first step, using different individual spreading codes for said respective slots, and detecting frame boundaries and a scramble code group on the basis of a second average

correlation coefficient, and a third step of descrambling a common pilot signal on the basis of said frame boundaries and scramble code group detected at the second step, and detecting a scramble code on the basis of a third average

5   correlation coefficient, and wherein after said first, second, and third steps have been repeated, a scramble code is detected using a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected at said second step are

10   equal.

19.   The cell search method for a mobile station in a mobile communication system according to Claim 18, characterized in that said third step comprises calculating a seventh

15   average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected at said second step are equal, and detecting said scramble codes using

20   the seventh average correlation coefficient.

20.   The cell search method for a mobile station in a mobile communication system according to Claim 4, characterized in that a plurality of said first average correlation

25   values are weighted.

21.   The cell search method for a mobile station in a mobile

communication system according to Claim 4, characterized in that said fourth average correlation value is calculated by adding a value obtained by multiplying a plurality of said first average correlation values by a forgetting

5 factor.

22. The cell search method for a mobile station in a mobile communication system according to Claim 4, characterized in that said predetermined averaging section is adaptively

10 changed according to a state of said mobile station.

23. The cell search method for a mobile station in a mobile communication system according to Claim 20, characterized in that a value of said weighting is adaptively changed

15 according to the state of said mobile station.

24. The cell search method for a mobile station in a mobile communication system according to Claim 21, characterized in that a value of said forgetting factor is adaptively

20 changed according to the state of said mobile station.

25. The cell search method for a mobile station in a mobile communication system according to Claim 22, characterized in that the state of said mobile station is either a state

25 immediately after power-on or a standby state or a communicating state.

26. The cell search method for a mobile station in a mobile communication system according to Claim 22, characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

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27. The cell search method for a mobile station in a mobile communication system according to Claim 23, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a

10 communicating state.

28. The cell search method for a mobile station in a mobile communication system according to Claim 23, characterized in that the state of said mobile station is set according

15 to a movement speed of said mobile station in advance.

29. The cell search method for a mobile station in a mobile communication system according to Claim 24, characterized in that the state of said mobile station is either a state

20 immediately after power-on or a standby state or a communicating state.

30. The cell search method for a mobile station in a mobile communication system according to Claim 24, characterized

25 in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

31. The cell search method for a mobile station in a mobile communication system according to Claim 15, characterized in that a plurality of said second average correlation values are weighted.

32. The cell search method for a mobile station in a mobile communication system according to Claim 15, characterized in that if said slot boundaries detected at said first step are equal, a value is added which is obtained by multiplying a sixth average correlation coefficient obtained by averaging a plurality of said second average correlation coefficients within a predetermined averaging section, by a forgetting factor, and if said slot boundaries detected at said first step are different, a result of the addition of said second average correlation coefficients is defined as said fifth average correlation coefficient.

33. The cell search method for a mobile station in a mobile communication system according to Claim 15, characterized in that said predetermined averaging section is adaptively changed according to a state of said mobile station.

34. The cell search method for a mobile station in a mobile communication system according to Claim 31, characterized in that a value of said weighting is adaptively changed according to the state of said mobile station.

35. The cell search method for a mobile station in a mobile communication system according to Claim 32, characterized in that a value of said forgetting factor is adaptively changed according to the state of said mobile station.

36. The cell search method for a mobile station in a mobile communication system according to Claim 33, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a communicating state.

37. The cell search method for a mobile station in a mobile communication system according to Claim 33, characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

38. The cell search method for a mobile station in a mobile communication system according to Claim 34, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a communicating state.

39. The cell search method for a mobile station in a mobile communication system according to Claim 34, characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

40. The cell search method for a mobile station in a mobile communication system according to Claim 35, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a

5 communicating state.

41. The cell search method for a mobile station in a mobile communication system according to Claim 35, characterized in that the state of said mobile station is set according

10 to a movement speed of said mobile station in advance.

42. The cell search method for a mobile station in a mobile communication system according to Claim 19, characterized in that a plurality of said third average correlation

15 values are weighted.

43. The cell search method for a mobile station in a mobile communication system according to Claim 19, characterized in that if said frame boundaries and scramble code groups

20 detected at said second step are respectively equal, a value can be added which is obtained by multiplying an eighth average correlation coefficient obtained by averaging a plurality of said third average correlation coefficients within a predetermined averaging section, by

25 a forgetting factor, and if said frame boundaries and scramble code groups detected at said second step are respectively different, a result of the addition of said

third average correlation coefficients is defined as said seventh average correlation coefficient.

44. The cell search method for a mobile station in a mobile communication system according to Claim 19, characterized in that said predetermined averaging section is adaptively changed according to a state of said mobile station.

45. The cell search method for a mobile station in a mobile communication system according to Claim 42, characterized in that a value of said weighting is adaptively changed according to the state of said mobile station.

46. The cell search method for a mobile station in a mobile communication system according to Claim 43, characterized in that a value of said forgetting factor is adaptively changed according to the state of said mobile station.

47. The cell search method for a mobile station in a mobile communication system according to Claim 44, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a communicating state.

48. The cell search method for a mobile station in a mobile communication system according to Claim 44, characterized in that the state of said mobile station is set according

to a movement speed of said mobile station in advance.

49. The cell search method for a mobile station in a mobile
communication system according to Claim 45, characterized
5   in that the state of said mobile station is either a state
immediately after power-on or a standby state or a
communicating state.

50. The cell search method for a mobile station in a mobile
10   communication system according to Claim 45, characterized
in that the state of said mobile station is set according
to a movement speed of said mobile station in advance.

51. The cell search method for a mobile station in a mobile
15   communication system according to Claim 46, characterized
in that the state of said mobile station is either a state
immediately after power-on or a standby state or a
communicating state.

20   52. The cell search method for a mobile station in a mobile
communication system according to Claim 46, characterized
in that the state of said mobile station is set according
to a movement speed of said mobile station in advance.

25   53. A cell search apparatus for a mobile station in a
mobile communication system, the apparatus being
characterized by comprising a first detector for

despreading a received signal using a common spreading code
common to all slots and detecting slot boundaries on the
basis of a first average correlation coefficient, a second
detector for despreading the signal on the basis of said
5   slot boundaries detected at the first detector, using
different individual spreading codes for said respective
slots, and detecting frame boundaries and a scramble code
group on the basis of a second average correlation
coefficient, and a third detector for descrambling a common
10   pilot signal on the basis of said frame boundaries and
scramble code group detected by the second detector, and
detecting a scramble code on the basis of a third average
correlation coefficient, and wherein said first detector
comprises means for storing a plurality of said first
15   average correlation value obtained during a plurality of
searches, second, and means for detecting slot boundaries
using a plurality of said first average correlation
coefficients.

20   54. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 53,
characterized in that said second detector detects frame
boundaries and a scramble code group using a plurality of
said second average correlation coefficients with which
25   said slot boundaries detected by said first detector are
equal.

55. The cell search apparatus for a mobile station in a mobile communication system according to Claim 53, characterized in that said third detector detects a scramble code using a plurality of said third average
5   correlation coefficients with which said frame boundaries and scramble code group detected by said second detector are equal.

56. The cell search apparatus for a mobile station in a
10   mobile communication system according to Claim 53, characterized in that said first detector comprises means for calculating a fourth average correlation coefficient by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and
15   means for detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

·57. The cell search apparatus for a mobile station in a
20   mobile communication system according to Claim 54, characterized in that said third detector detects a scramble code using a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected by said second detector
25   are equal.

58. The cell search apparatus for a mobile station in a

mobile communication system according to Claim 54, characterized in that said first detector comprises means for calculating a fourth average correlation coefficient by averaging a plurality of said first average correlation

5   coefficients within a predetermined averaging section, and means for detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

10   59.   The cell search apparatus for a mobile station in a mobile communication system according to Claim 54, characterized in that said second detector comprises means for calculating a fifth average correlation coefficient by averaging, within a predetermined averaging section,

15   a plurality of said second average correlation coefficients with which said slot boundaries detected by said first detector are equal, and means for detecting said frame boundaries and scramble code group using a timing with which the fifth average correlation coefficient is

20   largest.

60.   The cell search apparatus for a mobile station in a mobile communication system according to Claim 55, characterized in that said first detector comprises means

25   for calculating a fourth average correlation coefficient by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and

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means for detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

5   61.   The cell search apparatus for a mobile station in a mobile communication system according to Claim 55, characterized in that said third detector comprises means for calculating a seventh average correlation coefficient by averaging, within a predetermined averaging section,

10   a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected by said second detector are equal, and means for detecting said scramble codes using the seventh average correlation coefficient.

15

62.   The cell search apparatus for a mobile station in a mobile communication system according to Claim 57, characterized in that said first detector comprises means for calculating a fourth average correlation coefficient

20   by averaging a plurality of said first average correlation coefficients within a predetermined averaging section, and means for detecting said slot boundaries using a timing with which the fourth average correlation coefficient is largest.

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63.   The cell search apparatus for a mobile station in a mobile communication system according to Claim 57,

characterized in that said second detector comprises means for calculating a fifth average correlation coefficient by averaging, within a predetermined averaging section, a plurality of said second average correlation

5 coefficients with which said slot boundaries detected by said first detector are equal, and means for detecting said frame boundaries and scramble code group using a timing with which the fifth average correlation coefficient is largest.

10

64. The cell search apparatus for a mobile station in a mobile communication system according to Claim 57, characterized in that said third detector comprises means for calculating a seventh average correlation coefficient

15 by averaging, within a predetermined averaging section, a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected by said second detector are equal, and means for detecting said scramble codes using the seventh average

20 correlation coefficient.

65. A cell search apparatus for a mobile station in a mobile communication system, the apparatus being characterized by comprising a first detector for

25 despreading a received signal using a common spreading code common to all slots and detecting slot boundaries on the basis of a first average correlation coefficient, a second

detector for despreading the signal on the basis of said slot boundaries detected by the first detector, using different individual spreading codes for said respective slots, and detecting frame boundaries and a scramble code

5 group on the basis of a second average correlation coefficient, and a third detector for descrambling a common pilot signal on the basis of said frame boundaries and scramble code group detected by the second detector, and detecting a scramble code on the basis of a third average

10 correlation coefficient, and

wherein said second detector comprises means for storing a plurality of said second average correlation values with which said slot boundaries detected by said first detector are equal, and means for detecting frame boundaries and

15 a scramble code group using a plurality of said second average correlation coefficients.

66. The cell search apparatus for a mobile station in a mobile communication system according to Claim 65,

20 characterized in that said third detector comprises detecting a scramble code using a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected by said second detector are equal.

25

67. The cell search apparatus for a mobile station in a mobile communication system according to Claim 65,

characterized in that said second detector comprises means
for calculating a fifth average correlation coefficient
by averaging, within a predetermined averaging section,
a plurality of said second average correlation

5   coefficients with which said slot boundaries detected by
said first detector are equal, and means for detecting said
frame boundaries and scramble code group using a timing
with which the fifth average correlation coefficient is
largest.

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68.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 66,
characterized in that said second detector comprises means
for calculating a fifth average correlation coefficient

15   by averaging, within a predetermined averaging section,
a plurality of said second average correlation
coefficients with which said slot boundaries detected by
said first detector are equal, and means for detecting said
frame boundaries and scramble code group using a timing

20   with which the fifth average correlation coefficient is
largest.

69.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 66,

25   characterized in that said third detector comprises means
for calculating a seventh average correlation coefficient
by averaging, within a predetermined averaging section,

a plurality of said third average correlation coefficients with which said frame boundaries and scramble code group detected by said second detector are equal, and means for detecting said scramble codes using the seventh average

5   correlation coefficient.

70. A cell search apparatus for a mobile station in a mobile communication system, the apparatus being characterized by comprising a first detector for

10   despreading a received signal using a common spreading code common to all slots and detecting slot boundaries on the basis of a first average correlation coefficient, a second detector for despreading the signal on the basis of said slot boundaries detected by the first detector, using

15   different individual spreading codes for said respective slots, and detecting frame boundaries and a scramble code group on the basis of a second average correlation coefficient, and a third detector for descrambling a common pilot signal on the basis of said frame boundaries and

20   scramble code group detected by the second detector, and detecting a scramble code on the basis of a third average correlation coefficient, and
wherein said third detector comprises means for storing a plurality of said third average correlation coefficients

25   with which said frame boundaries and scramble code group detected by said second detector are equal, and means for detecting a scramble code is detected using a plurality

of said third average correlation coefficients.

71. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 70,
5   characterized in that said third detector comprises means
for calculating a seventh average correlation coefficient
by averaging, within a predetermined averaging section,
a plurality of said third average correlation coefficients
with which said frame boundaries and scramble code group
10 detected by said second detector are equal, and means for
detecting said scramble codes using the seventh average
correlation coefficient.

72. The cell search apparatus for a mobile station in a
15 mobile communication system according to Claim 56,
characterized in that a plurality of said first average
correlation values are weighted.

73. The cell search apparatus for a mobile station in a
20 mobile communication system according to Claim 56,
characterized in that said fourth average correlation
value is calculated by adding a value obtained by
multiplying a plurality of said first average correlation
values by a forgetting factor.

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74. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 56,

characterized in that said predetermined averaging section
is adaptively changed according to a state of said mobile
station.

5   75.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 72,
characterized in that a value of said weighting is
adaptively changed according to the state of said mobile
station.

10

76.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 73,
characterized in that a value of said forgetting factor
is adaptively changed according to the state of said mobile
15   station.

77.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 74,
characterized in that the state of said mobile station is
20   either a state immediately after power-on or a standby
state or a communicating state.

78.   The cell search apparatus for a mobile station in a
mobile communication system according to Claim 74,
25   characterized in that the state of said mobile station is
set according to a movement speed of said mobile station
in advance.

79. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 75,
characterized in that the state of said mobile station is
5 either a state immediately after power-on or a standby
state or a communicating state.

80. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 75,
10 characterized in that the state of said mobile station is
set according to a movement speed of said mobile station
in advance.

81. The cell search apparatus for a mobile station in a
15 mobile communication system according to Claim 76,
characterized in that the state of said mobile station is
either a state immediately after power-on or a standby
state or a communicating state.

20 82. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 76,
characterized in that the state of said mobile station is
set according to a movement speed of said mobile station
in advance.
25

83. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 67,

characterized in that a plurality of said second average correlation values are weighted.

84. The cell search apparatus for a mobile station in a
5 mobile communication system according to Claim 67, characterized in that if said slot boundaries detected by said first detector are equal, a value is added which is obtained by multiplying a sixth average correlation coefficient obtained by averaging a plurality of said
10 second average correlation coefficients within a predetermined averaging section, by a forgetting factor, and if said slot boundaries detected by said first detector are different, a result of the addition of said second average correlation coefficients is defined as said fifth
15 average correlation coefficient.

85. The cell search apparatus for a mobile station in a mobile communication system according to Claim 67, characterized in that said predetermined averaging section
20 is adaptively changed according to a state of said mobile station.

86. The cell search apparatus for a mobile station in a mobile communication system according to Claim 83,
25 characterized in that a value of said weighting is adaptively changed according to the state of said mobile station.

87. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 84,
characterized in that a value of said forgetting factor
is adaptively changed according to the state of said mobile
station.

88. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 85,
characterized in that the state of said mobile station is
either a state immediately after power-on or a standby
state or a communicating state.

89. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 85,
characterized in that the state of said mobile station is
set according to a movement speed of said mobile station
in advance.

90. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 86,
characterized in that the state of said mobile station is
either a state immediately after power-on or a standby
state or a communicating state.

91. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 86,

characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

5 92. The cell search apparatus for a mobile station in a mobile communication system according to Claim 87, characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a communicating state.

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93. The cell search apparatus for a mobile station in a mobile communication system according to Claim 88, characterized in that the state of said mobile station is set according to a movement speed of said mobile station

15 in advance.

94. The cell search apparatus for a mobile station in a mobile communication system according to Claim 71, characterized in that a plurality of said third average

20 correlation values are weighted.

95. The cell search apparatus for a mobile station in a mobile communication system according to Claim 71, characterized in that if said frame boundaries and scramble

25 code groups detected by said second detector are respectively equal, a value can be added which is obtained by multiplying an eighth average correlation coefficient

obtained by averaging a plurality of said third average
correlation coefficients within a predetermined averaging
section, by a forgetting factor, and if said frame
boundaries and scramble code groups detected by said second
5   detector are respectively different, a result of the
addition of said third average correlation coefficients
is defined as said seventh average correlation
coefficient.

10   96. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 71,
characterized in that said predetermined averaging section
is adaptively changed according to a state of said mobile
station.

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97. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 94,
characterized in that a value of said weighting is
adaptively changed according to the state of said mobile
20   station.

98. The cell search apparatus for a mobile station in a
mobile communication system according to Claim 95,
characterized in that a value of said forgetting factor
25   is adaptively changed according to the state of said mobile
station.

99. The cell search apparatus for a mobile station in a mobile communication system according to Claim 96, characterized in that the state of said mobile station is either a state immediately after power-on or a standby
5   state or a communicating state.

100. The cell search apparatus for a mobile station in a mobile communication system according to Claim 96, characterized in that the state of said mobile station is
10   set according to a movement speed of said mobile station in advance.

101. The cell search apparatus for a mobile station in a mobile communication system according to Claim 97,
15   characterized in that the state of said mobile station is either a state immediately after power-on or a standby state or a communicating state.

102. The cell search apparatus for a mobile station in
20   a mobile communication system according to Claim 97, characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.

25   103. The cell search apparatus for a mobile station in a mobile communication system according to Claim 98, characterized in that the state of said mobile station is

either a state immediately after power-on or a standby state or a communicating state.

104. The cell search apparatus for a mobile station in
5   a mobile communication system according to Claim 98,
characterized in that the state of said mobile station is set according to a movement speed of said mobile station in advance.